

	12 V	24 V	48 V
Available versions	x		
Input voltage: / Line frequency	198 - 264VAC / 50Hz		
Max output power	294W		
Step 0 < 30min (Yellow)	2.4A when battery voltage <10.5V.	1.4A, when battery voltage <21V	0.7A, when battery voltage <42V
Step 0 > 30min Red (error-mode)	0A		
Step 1 Constant Current (Yellow)	20A +0/-0.3A, when battery voltage >10.5V (Step 1 until Vbat = 14.7V)	10A +0/-0.3A, when battery voltage >21V (Step 1 until Vbat = 29.4V)	5A +0.1/-0.3A, when battery voltage >42V (Step 1 until Vbat = 58.8V)
Step 2 Const Voltage (Flashing Yellow)	14.7V ± 0.1V and charge current is tapering. (Step 2 until I charge < 2.4A or > 4h)	29.4V ± 0.2V and charge current is tapering (Step 2 until I charge <1.4A or >4h)	58.8V ± 0.2V and charge current is tapering (Step 2 until I charge <0.7A or >4h)
Step 3 Charge Completed (Green)	13.7V ± 0.2V, supply current up to maximum 18A for possible parallel load. (Step 3 until I charge > 18A)	27.4V ± 0.1V, supply current up to maximum 10A for possible parallel load Step 3 ( until I charge >8.5A)	54.8V ± 0.1V, supply current up to maximum 5A for possible parallel load (Step 3 until I charge >3.5A)
Charge timer (step 2)	4h		
Safety timer	72h		
Restart charge current and voltage approx.	>18A or <13V in 10 sec.	>8.5A or <26V in 10 sec.	>3.5A or <52V in 10 sec.
Formation Charge	Low current start-up of deeply discharged battery.	Low current start-up of deeply discharged battery	Low current start-up of deeply discharged battery
Float charge	20A pulses at safe float voltage level for maximum topping of battery capacity.	10A pulses at safe float voltage level for maximum topping of battery capacity	10A pulses at safe float voltage level for maximum topping of battery capacity
Indication when "Battery not connected"	LED flashing Green (1s/1s)	Green "PULSE" LED flashing Green (1s/1s)	Green "PULSE" LED flashing Green (1s/1s)
Temperature compensation of charge voltage	-3 to -4mV/°C pr. cell When delivered with temp. sensor.		
Ripple	< 100mVp-p		
Efficiency (at 100% load, 230V) approx.	>91 %	>92 %	>92 %
Switch frequency approx.	65kHz		
Leakage current from battery with mains switched off	< 140 uA @ 12V	< 130 uA @ 24V	< 140 uA @ 48V
Protection	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof Thermal protection Prevents sparking Charge timer: 4h Safety timer: 72h. Error Indication: Red (5 blinks) Charging of wrong lower voltage battery pack (e.g. 6V) will be limited to 2.4A and terminated after 30min. Indication: Red (4 blinks) Defect battery: Error Indication: Red (6 blinks) -Battery does not accept pulse current in float mode, and battery voltage drops below 21V after opening output relay. Charging battery >16.00V terminated immediately. Error Indication: LED is off	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof Thermal protection Prevents sparking Charge timer: 4h Safety timer: 72h. Error Indication: Red (5 blinks) Charging of wrong lower voltage battery pack (e.g. 12V) will be limited to 1.4A and terminated after 30min. Indication: Red (4 blinks) Defect battery: Error Indication: Red (6 blinks) -Battery does not accept pulse current in float mode, and battery voltage drops below 21V after opening output relay. Charging battery >32.0V terminated immediately. Error Indication: LED is off	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof Thermal protection Prevents sparking Charge timer: 4h Safety timer: 72h. Error Indication: Red (5 blinks) Charging of wrong lower voltage battery pack (e.g. 36V) will be limited to 0.7A and terminated after 30min. Indication: Red (4 blinks) Defect battery: Error Indication: Red (6 blinks) -Battery does not accept pulse current in float mode, and battery voltage drops below 21V after opening output relay. Charging battery >63.5V terminated immediately. Error Indication: LED is off
Temperature range	Operating: ±25 to +40oC. Storage: ±25 to +65oC		
Derating	Charge current automatically reduced to approx.15A at 40°C	Charge current automatically reduced to approx. 7.5A at 40oC	Charge current automatically reduced to approx. 3.5A at 40oC
Safety	EN 60601-1		
Insulation class	Double insulated (Class II)		
Insulation voltage: Primary – secondary	4000VAC / 5700VDC		
EMC standards	EN 60601-1-2: 2015 (Edition 4)		

Input terminal	2 pin IEC60320 or mains cable		
Output terminals	Cord with Insulated battery clips and temp. sensor	Cord with Insulated battery clips and temp. sensor or XLR plug	Cord with Insulated battery clips and temp. sensor or XLR plug
Protection against ingress (IP-code)	IP44		
Recommended battery capacity	100 - 1000Ah.	50 - 500Ah	25 - 250Ah
Dimensions	210 × 113 × 53 mm		
Weight approx.	With mains cable: 1500g. With IEC60320: 1300g	With mains cable 1400g. With IEC60320 1150g	With mains cable 1400g. With IEC60320 1150g